

**U.S. Environmental Protection Agency  
Science Advisory Board  
SAB Workgroup on Residue Sampling Plan  
Collected Individual Comments on “Emergency Response Quality Assurance Sampling Plan  
for Hurricane Katrina Response Screening Level Sampling for Sediment in Areas where  
Flood Water Receded, Southeast Louisiana”**

**Comments were received after 4 p.m. on September 12 and before 11 a.m. on September 13**

**NOTE: The Workgroup will have a public conference call meeting  
Tuesday, September 13 from 1-4 Eastern Time  
For Further Information, visit [www.epa.gov/sab](http://www.epa.gov/sab)**

**SAMUEL L. LUOMA**

I have reviewed the document and have a few comments:

1. I find the sampling strategy somewhat surprising. The Hurricane, as I understand it, covered a wide diversity of areas with a wide diversity of problems. e.g. The Gulf Coast suffered serious storm surges; New Orleans suffered a slower inundation from broken levees, and everywhere in between. Rural areas have different problems from urban areas, which are different from industrial areas. Choosing one square mile assumes that large scale variation in contamination is less important than small scale variability. The hurricane would severely mix things up, but I think the assumption of homogeneity is less valid than the opposite. There will be homogenization of sediments where energy was great. But local issues are likely to be more important where flooding occurred after the storm, or continued after the surge. I would suggest choosing 6 different socioeconomic/physically affected areas and collecting four samples from each. This is a screen, not a final study; so spatial understanding is more important, as best it can be accomplished with this few samples, than precision within a small area. If one accounts for particle size, variability in sediment concentrations is really not as great as often suggested (based upon thousands of river and estuarine samples). Lets consider the laugh test: Do we really want to extrapolate to New Orleans from a one square mile sample in Gulf Port???? or vice versa????

2. I doubt this will be adopted, but I must say it, very seriously. I believe these data will not be interpretable unless particle size bias is removed (especially given the physical issues). This is also a way to make a geographically distributed sampling more defensible (reduce spatial variability). More important, the health issues will come from fine-grained sediments (that is what accumulates under fingernails, is stirred into water and becomes dust when this material dries). I suggest all samples should be filtered by 64um screens (for organic samples) and nylon or plastic mesh (for metals) using either DI water or local water (choose in advance). That mesh size is easy to handle. Many arguments will be made by doubters about uncertainties in such an approach, but those uncertainties are small compared to what will be observed if we sample a surge area (presumably much sand) vs. the "sludge" contaminated areas of New Orleans, for example. To sample sands, without eliminating the innocuous large particles could lead to completely the wrong conclusions. Moreover, any knowledgeable person will quickly recognize this issue and the entire study could

lose its credibility. The question here is concentration and concentration relevant to human health, not transport. In such cases fine-grained sediment are preferred. I would suggest using USGS NAWQA methodology for sediments to resolve this issue with a government approved method. I will gladly take the "heat", if this becomes controversial.

3. Please do not use glass jars for metals/metalloids, including mercury. They inevitably have metal or rubber sealed caps. We made this mistake in 1969 sampling street runoff, but I think we all know better now. Plastic is not that hard to get. Please also use acid washed sample containers for metals.

4. Metal contaminants should be those of health concern.

Otherwise this should be pretty straightforward.

**JOAN B. ROSE** (Additional Comments. in regard to the conference call. )

I want to make sure it is emphasized the important role that EPA has in protecting public health. I am quite dismayed that the CDC is saying "no outbreaks" "diarrhea is a nuisance". EPA has much more experience than CDC in addressing and testing water quality and public health risks, using QMRA including during outbreaks, epi studies during recreational activities, for biosolids, during the ICR etc. Thus EPA's expertise in addressing exposure is extremely important.

I do not understand why the health professionals are downplaying the risks. First it is quite clear that *Vibrio vulnificus* was a problem in the gulf, most of the cases in the CDC data base comes from Florida and shellfish, but on occasion it is due to contact with the water. 6 cases associated with this storm is an outbreak in my view and by the way the individuals died. More than in the anthrax event.

Diarrhea deaths in the elderly are high in the US, and I have heard up to 500 cases of "dysentery" have occurred, but we do not know what is causing all this. If the population is dehydrated already, this is very serious.

In addition these diseases could have long term health outcomes, particularly in the sensitive populations. (Gullian Bare disease, myocarditis etc). Who is watching out for these people who have already suffered? We must do what is right.

Thus water quality assessment for the high risk agents is needed.

1. *Cryptosporidium*
2. *Giardia*
3. Enteric Viruses
4. *Vibrios*
5. *Salmonella*
6. *Campylobacter*
7. *E.coli* (pathogenic strains)

## 8. HABs

Skin Contact, aerosol exposure, drinking, even secondary contact like boating could spread the agents.

The buildings are going to be contaminated as well because of all the people that were there as well as the water. Indoor contamination, fungi etc could be a problem. EPA has experience in cleaning the built environment.

I would like to see EPA step up to the plate, and take a strong leadership role in the assessment and clean up of the area and provide assurance of longer term monitoring of the ecosystem and environmental health.